

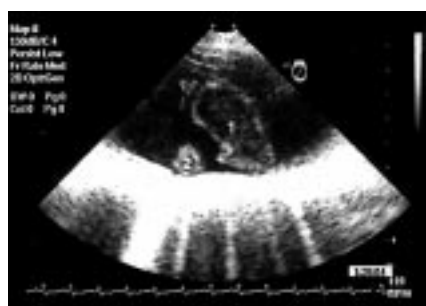
## IMAGES IN CARDIOLOGY.....

### Unusual echocardiographic appearance of traumatic aortic dissection

A 47 year old man was admitted to the intensive care unit of our hospital after a car accident. The patient was confused and agitated. The clinical examination revealed absence of breath sounds in the right chest side, whereas no signs of external chest injury were present. The patient had a blood pressure of 50/30 mm Hg and a heart rate of 104 beats/min. A chest tube was immediately inserted in the right chest wall relieving a tension pneumothorax and the blood pressure rose to 90/50 mm Hg. The ECG disclosed sinus tachycardia, non-specific intraventricular conduction delay as well as ST segment depression and T wave inversion in leads II, III, and aVF. The haematocrit was 33.5%, serum creatine kinase was 7.137 U/ml (normal range 38–174 U/ml), and troponin I was 5 ng/ml (normal range 0–1 ng/ml). Chest computed tomography disclosed atelectasis of the right upper lobe and a normal mediastinum. A transoesophageal echocardiogram revealed a mild hypokinesia of the left ventricular apex, while in the descending aorta (at 32 cm below the incisors) a mass protruding into the aortic lumen was detected. Very close and caudally to this mass a second smaller one was also present (below left

and centre, numbers 1 and 2). These masses were not densely echogenic and colour Doppler did not reveal any flow in them (below right). Instead, they seemed to be moving passively by the aortic blood flow. Although we did notice atherosclerotic lesions on the aortic wall, we did not identify a grade III lesion (that is, an ulcerated atherosclerotic plaque which could predispose to local thrombosis) in the area. An aortography was performed, which revealed the presence of traumatic aortic dissection at the level of the aortic isthmus. During the following hour, the patient deteriorated clinically and died from cardiac asystole, while arrangements were being made for a transfer to a cardiac surgery centre. The post mortem examination confirmed the presence of a traumatic aortic dissection.

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### Epsilon waves in a patient with arrhythmogenic right ventricular cardiomyopathy



A 26 year old woman with episodes of syncope was referred to our university hospital for further evaluation. Her elder sister died suddenly at the age of 18. Chest radiographs showed cardiac enlargement with a cardiothoracic ratio of 52%. The ECG showed a sinus rhythm at a rate of 62, QRS prolongation, and inverted T waves. There were prominent upright deflections after the QRS complex in leads V1–3 (arrows). These waves are called epsilon waves. Echocardiography revealed severe dilatation of the right ventricle and reduction of the right ventricular wall motion. Left bundle branch block type ventricular tachycardia was documented. Endomyocardial biopsy sample from the right ventricle showed fibro-fatty degeneration, and a diagnosis of arrhythmogenic right ventricular cardiomyopathy (ARVC) was made. Epsilon waves are one of the major diagnostic criteria of ARVC. Epsilon waves can be recorded using 12 lead electrocardiography during sinus rhythm, and are useful for establishing a diagnosis of ARVC.

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